Work Order ID 68708

Wednesday, April 20, 2011 8:36:50 AM

Item ID: D205-634-041 **Accept** **Setup Start** **Stop**

Revision ID:

Item Name: Replacement Skidtube

Start Date: 4/20/2011 **Start Qty:** 1.00 **Cust Item ID:**

Required Date: 4/25/2011 **Req'd Qty:** 1.00 **Customer:**

Reference:

Approvals: **Process Plan:** ✓ **Date:** 11-04-20 **Tooling:** _____ **Date:** _____ **Run Start** **Stop**

QC: _____ **Date:** _____ **SPC (Y/N):** _____ **Date:** _____

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
Draw Nbr	**Revision Nbr**								
D2580-041	Rev.D DEO-D1								
100	DOCUMENT CONTROL	0.00				N/A			
DC	**Memo**	0.00							
Document Control	Photocopy D205-634 bluefile & type labels per PPP D205-634-041 ~~CHG004~~ CHG002 (welded)								
110	BENDING MACHINE - SKIDTUBES	0.00				1	0	BE 11/04/20	
CNC Bend 1	**Memo**	0.00							
CNC Delta 100 Bender	1-Bend as per program D2580.C on CNC Bender and Folio 16 2-Cut tubes as per Dwg. D2580 3- scribe batch# in aft end of tube								

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W/O:		WORK ORDER CHANGES					
DATE	**STEP**	**PROCEDURE CHANGE**	**By**	**Date**	**Qty**	**Approval** Chief Eng / Prod Mgr	**Approval** QC Inspector

Part No: _____ **PAR #:** _____ **Fault Category:** _____ **NCR:** Yes No **DQA:** _____ **Date:** _____

Resolution: _____ **Disposition:** _____ **QA: N/C Closed:** _____ **Date:** _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	**STEP**	**Description of NC** Section A	**Corrective Action** Section B			**Verification** Section C	**Approval** Chief Eng	**Approval** QC Inspector
			Initial Chief Eng	**Action Description** Chief Eng	**Sign & Date**			

NOTE: Date & initial all entries

Work Order ID 68708

Wednesday, April 20, 2011 8:36:50 AM

Item ID: D205-634-041 **Accept** **Setup Start** **Stop**

Revision ID:

Item Name: Replacement Skidtube

Start Date: 4/20/2011 **Start Qty:** 1.00 **Cust Item ID:**

Required Date: 4/25/2011 **Req'd Qty:** 1.00 **Customer:**

Reference:

Run Start **Stop**

Approvals: **Process Plan:** _____ **Date:** _____ **Tooling:** _____ **Date:** _____

QC: _____ **Date:** _____ **SPC (Y/N):** _____ **Date:** _____

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
120		0.00				1	0		EE 11/05/02
Skidtubes	**Memo**	0.00							
Skidtubes	1- Deburr ends and remove bending marks 2- Prepare tube for swaging as per QSI 002								
130	QC5- Inspect part completeness to step on W/O	0.00				10			
QC	**Memo**	0.00							
Quality Control									

S 11/05/02

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W/O:		WORK ORDER CHANGES					
DATE	**STEP**	**PROCEDURE CHANGE**	**By**	**Date**	**Qty**	**Approval** Chief Eng / Prod Mgr	**Approval** QC Inspector

Part No: _____ **PAR #:** _____ **Fault Category:** _____ **NCR:** Yes No **DQA:** _____ **Date:** _____

Resolution: _____ **Disposition:** _____ **QA: N/C Closed:** _____ **Date:** _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
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NOTE: Date & initial all entries

Work Order ID 68708

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Start Date: 4/20/2011 **Start Qty:** 1.00 **Cust Item ID:**

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Reference:

Run Start

Approvals: **Process Plan:** _____ **Date:** _____ **Tooling:** _____ **Date:** _____

Stop

QC: _____ **Date:** _____ **SPC (Y/N):** _____ **Date:** _____

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
140		0.00							
Skidtubes	**Memo**	0.00							
Skidtubes	1-Weld step D2576 as per Dwg. D2580 and QSI 004 A/R□□□ Aluminum Rod M116577 BE-11/05/02 BB 11/05/04								
	2-Grind welds on step as per Dwg D2580								
	3-Insert D4202-1 spacer, swage as per QSI002 and trim/ grind flush per QSI002 and dwg. Hold x-bolt with DT9701 Use tube expander 1/2 x17G to start expantion and finish with 1/2 x 18G to achieve dwg dimention. WELDED BE 11/05/02 A/R M116577								
	4-Drill holes for wearplates using DT 8217 & DT8937 Open holes to 19/64", adjust stopper not to hit web.Deburr BB 11/05/04								
	6-Drill pilot holes for aft cap using DT 8215Open holes to 0.208". Deburr								
	7-Drill pilot holes for Tow ring using DT8091, open to .640"and Deburr + counter Bore Per Dwg								
150	QC10- Inspect visual per QSI004- ground welds	0.00							
QC	**Memo**	0.00							
Quality Control									

BE 11/05/05

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W/O:		WORK ORDER CHANGES					
DATE	**STEP**	**PROCEDURE CHANGE**	**By**	**Date**	**Qty**	**Approval** Chief Eng / Prod Mgr	**Approval** QC Inspector

Part No: _____ **PAR #:** _____ **Fault Category:** _____ **NCR:** Yes No **DQA:** _____ **Date:** _____

Resolution: _____ **Disposition:** _____ **QA: N/C Closed:** _____ **Date:** _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
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NOTE: Date & initial all entries

Item ID: D205-634-041 **Accept** **Setup Start** **Stop**
Revision ID:
Item Name: Replacement Skidtube
Start Date: 4/20/2011 **Start Qty:** 1.00 **Cust Item ID:**
Required Date: 4/25/2011 **Req'd Qty:** 1.00 **Customer:**
Reference:

Approvals: **Process Plan:** _____ **Date:** _____ **Tooling:** _____ **Date:** _____ **Run Start** **Stop**
QC: _____ **Date:** _____ **SPC (Y/N):** _____ **Date:** _____

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
160 QC Quality Control	QC5- Inspect part completeness to step on W/O	0.00							
	Memo	0.00							
170 HandFinish Hand Finishing	Pressure Wash per QSI005 4.3	0.00							
	Memo Re-alodine tube as per QSI 005 section 4.1.2.1 do not acid etch and leave fwd cap out of solution.	0.00							
180 Powdercoat Powder Coating	White Gloss(Ref:4.3.5.1) per QSI005 4.3-Alum	0.00							
	Memo START TIME: 9:40 OVEN TEMPERATURE: 320 FINISH TIME: 10:10	0.00							

11/05/05

(X) 11/05/05

(X) 11/05/06

M116964

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W/O:		WORK ORDER CHANGES					
DATE	**STEP**	**PROCEDURE CHANGE**	**By**	**Date**	**Qty**	**Approval** Chief Eng / Prod Mgr	**Approval** QC Inspector

Part No: _____ **PAR #:** _____ **Fault Category:** _____ **NCR:** Yes No **DQA:** _____ **Date:** _____

Resolution: _____ **Disposition:** _____ **QA: N/C Closed:** _____ **Date:** _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
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NOTE: Date & initial all entries

Work Order ID 68708

Wednesday, April 20, 2011 8:36:50 AM

Item ID: D205-634-041 **Accept** **Setup Start**

Revision ID: **Stop**

Item Name: Replacement Skidtube

Start Date: 4/20/2011 **Start Qty:** 1.00 **Cust Item ID:**

Required Date: 4/25/2011 **Req'd Qty:** 1.00 **Customer:**

Reference:

Run Start

Approvals: **Process Plan:** _____ **Date:** _____ **Tooling:** _____ **Date:** _____

Stop

QC: _____ **Date:** _____ **SPC (Y/N):** _____ **Date:** _____

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
190	QC3- Inspect Part Finish	0.00				1		BL 11-5-9	
QC	**Memo**	0.00							
Quality Control									

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W/O:		WORK ORDER CHANGES					
DATE	**STEP**	**PROCEDURE CHANGE**	**By**	**Date**	**Qty**	**Approval** Chief Eng / Prod Mgr	**Approval** QC Inspector

Part No: _____ **PAR #:** _____ **Fault Category:** _____ **NCR:** Yes No **DQA:** _____ **Date:** _____

Resolution: _____ **Disposition:** _____ **QA: N/C Closed:** _____ **Date:** _____

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NOTE: Date & initial all entries

Item ID: D205-634-041 **Accept** **Setup Start** **Stop**
Revision ID:
Item Name: Replacement Skidtube
Start Date: 4/20/2011 **Start Qty:** 1.00 **Cust Item ID:**
Required Date: 4/25/2011 **Req'd Qty:** 1.00 **Customer:**
Reference:

Approvals: **Process Plan:** _____ **Date:** _____ **Tooling:** _____ **Date:** _____ **Run Start** **Stop**
QC: _____ **Date:** _____ **SPC (Y/N):** _____ **Date:** _____

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
200		0.00							
HandFinish		0.00							
Hand Finishing									

Memo

1-Install inserts & wearplates & Gaskets as per Dwg. D2580. Use a drop of Sikaflex on insert holes before installing wearplates
A/R □□□ Sikaflex-291 M116945□□
Sikaflex expire date: 12-01

2-Coat D2594-3 O' rings with Petroleum Jelly and install on D2594-1 plugs as per Dwg D2580

3-Inspect for foreign object per QSI 024

4-Install 2855 Aft Cap as per Dwg D2580 and seal Fwd Step & Aft Cap with Sikaflex. Clean excess adhesive
A/R □ □□ Sikaflex-291 M116945□□
Sikaflex expire date: 12-01.

5-Wing Walk as per Dwg D2580 and QSI 005 4.4
Batch: M117315

BR 11-5-9

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W/O:		WORK ORDER CHANGES					
DATE	**STEP**	**PROCEDURE CHANGE**	**By**	**Date**	**Qty**	**Approval** Chief Eng / Prod Mgr	**Approval** QC Inspector

Part No: _____ **PAR #:** _____ **Fault Category:** _____ **NCR:** Yes No **DQA:** _____ **Date:** _____

Resolution: _____ **Disposition:** _____ **QA: N/C Closed:** _____ **Date:** _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
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			Initial Chief Eng	**Action Description** Chief Eng	**Sign & Date**			

NOTE: Date & initial all entries

Item ID: D205-634-041 **Accept** **Setup Start** **Stop**
Revision ID:
Item Name: Replacement Skidtube
Start Date: 4/20/2011 **Start Qty:** 1.00 **Cust Item ID:**
Required Date: 4/25/2011 **Req'd Qty:** 1.00 **Customer:**
Reference:

Approvals: **Process Plan:** _____ **Date:** _____ **Tooling:** _____ **Date:** _____ **Run Start** **Stop**
QC: _____ **Date:** _____ **SPC (Y/N):** _____ **Date:** _____

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
210	QC5- Inspect part completeness to step on W/O	0.00							
QC	**Memo**	0.00							
Quality Control	Inspect Aft Cap, Fwd Step and Wing Walk of work to Current Step Inspect for Foreign objects per QSI 024								
220		0.00							
Packaging	Packaging								
Packaging	**Memo**	0.00							
	Identify and pack for shipping as per PPPD205-634-041 Location: _____ PPP Rev: PPP 6 5/4/16								
230	QC21- Final Inspection - Work Order Release	0.00							
QC	**Memo**	0.00							
Quality Control									

5/4/16

5/4/16

11/5/16

MF
11-05-16

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	**STEP**	**PROCEDURE CHANGE**	**By**	**Date**	**Qty**	**Approval** Chief Eng / Prod Mgr	**Approval** QC Inspector

Part No: _____ **PAR #:** _____ **Fault Category:** _____ **NCR:** Yes No **DQA:** _____ **Date:** _____

Resolution: _____ **Disposition:** _____ **QA: N/C Closed:** _____ **Date:** _____

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DATE	**STEP**	**Description of NC** Section A	**Corrective Action** Section B			**Verification** Section C	**Approval** Chief Eng	**Approval** QC Inspector
			Initial Chief Eng	**Action Description** Chief Eng	**Sign & Date**			

NOTE: Date & initial all entries

Picklist Print

Wednesday, April 20, 2011 8:36:56 AM

Work Order ID: 68708

Parent Item: D205-634-041

Parent Item Name: Replacement Skidtube

Start Date: 4/20/2011 **Required Date:** 4/25/2011

Start Qty: 1.00 **Required Qty:** 1.00

Comments: IPP Rev:N 02.08.28 FP was QC5 in Step 27; Added QC5 to Step 30
KJ IPP Rev P 10.02.19
per PAR09-043 EC verified by:DD
IPP Rev. O 06.02.28 Added paperwork EC
IPP Rev:P 07-07-09 SS Wearplates & Gaskets JLM IPP Rev:Q
10.12.01 as per chg003 DD verf:EC

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
~~D4202-1~~ D2579		Manufactured	No			140	Each	443.0000	20	20			
Spacer													

Location	Loc Qty	Loc Code
LG002	443	
66929	106	
67129	196	
67308	1	
67430	140	

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
D2580-1		Manufactured	No			110	Each	6.0000	1	1			
205 Skidtube bent detail													

Location	Loc Qty	Loc Code
LG	6	
67646	2	
68564	2	
68566	2	

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
D2576-3		Manufactured	No			140	Each	14.0000	1	1			
Step (maching detail)													

Location	Loc Qty	Loc Code
LG	14	
52215	14	

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W/O:		WORK ORDER CHANGES					
DATE	**STEP**	**PROCEDURE CHANGE**	**By**	**Date**	**Qty**	**Approval** Chief Eng / Prod Mgr	**Approval** QC Inspector

Part No: _____ **PAR #:** _____ **Fault Category:** _____ **NCR:** Yes No **DQA:** _____ **Date:** _____

Resolution: _____ **Disposition:** _____ **QA: N/C Closed:** _____ **Date:** _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	**STEP**	**Description of NC** Section A	**Corrective Action** Section B			**Verification** Section C	**Approval** Chief Eng	**Approval** QC Inspector
			Initial Chief Eng	**Action Description** Chief Eng	**Sign & Date**			

NOTE: Date & initial all entries

Picklist Print

Wednesday, April 20, 2011 8:36:57 AM

Work Order ID: 68708

Parent Item: D205-634-041

Parent Item Name: Replacement Skidtube

Start Date: 4/20/2011 **Required Date:** 4/25/2011

Start Qty: 1.00 **Required Qty:** 1.00

D2855	Manufactured	No		200	Each	70.0000	1	1
Cap								

Location	Loc Qty	Loc Code	
FP007	70		1 BR 11-5-9
53791 ✓	33		
65519	2		
65569	35		

AN3-5A	Purchased	No		200	Each	1,304.000	2	2
Bolt								

Location	Loc Qty	Loc Code	
ST350	1304		2 BR 11-5-9
115371 ✓	500		
116632	4		
117423	800		

AN960JD10L	NAS1149D0332J	Purchased	No	117291	200	Each	0.0000	2	2
Washer									2 BR 11-5-9

ALS7-1032-130	Purchased	No		200	Each	449.0000	50	50
Insert								

ALSH-1032-130

Location	Loc Qty	Loc Code	
ST281	200		50 BR 11-5-9
117331 ✓	200		
ST282	249		
116800	249		

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W/O:		WORK ORDER CHANGES					
DATE	**STEP**	**PROCEDURE CHANGE**	**By**	**Date**	**Qty**	**Approval** Chief Eng / Prod Mgr	**Approval** QC Inspector

Part No: _____ **PAR #:** _____ **Fault Category:** _____ **NCR:** Yes No **DQA:** _____ **Date:** _____

Resolution: _____ **Disposition:** _____ **QA: N/C Closed:** _____ **Date:** _____

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			Initial Chief Eng	**Action Description** Chief Eng	**Sign & Date**			

NOTE: Date & initial all entries

Picklist Print

Wednesday, April 20, 2011 8:36:57 AM

Work Order ID: 68708

Parent Item: D205-634-041

Parent Item Name: Replacement Skidtube

Start Date: 4/20/2011 **Required Date:** 4/25/2011

Start Qty: 1.00 **Required Qty:** 1.00

AN3C4A	Purchased	No		200	Each	2,358.000	50	50	
BOLT									

Location	Loc Qty	Loc Code		
ST350	2358			
116924	358			
117094 ✓	1000			
117313 ✓	1000		50	BR 11-5-9

AN960C10L , NAS1149C0332R ✓	Purchased	No		200	Each	0.0000	50	50	
washer			117291					50	BR 11-5-9
D3566-13	Manufactured	No		200	Each	41.0000	1	1	
Gasket									

Location	Loc Qty	Loc Code		
FP014	41			
66550 ✓	21		1	BR 11-5-9
68341	20			

D3566-5	Manufactured	No		200	Each	27.0000	1	1	
Gasket									

Location	Loc Qty	Loc Code		
FP015	27			
66552 ✓	5		1	BR 11-5-9.
67589 ✓	22			

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	**STEP**	**PROCEDURE CHANGE**	**By**	**Date**	**Qty**	**Approval** Chief Eng / Prod Mgr	**Approval** QC Inspector

Part No: _____ **PAR #:** _____ **Fault Category:** _____ **NCR:** Yes No **DQA:** _____ **Date:** _____

Resolution: _____ **Disposition:** _____ **QA: N/C Closed:** _____ **Date:** _____

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NOTE: Date & initial all entries

Picklist Print

Wednesday, April 20, 2011 8:36:57 AM

Work Order ID: 68708

Parent Item: D205-634-041

Parent Item Name: Replacement Skidtube

Start Date: 4/20/2011 **Required Date:** 4/25/2011

Start Qty: 1.00 **Required Qty:** 1.00

D3566-1	Manufactured	No		200	Each	36.0000	2	2
Gasket								

Location	Loc Qty	Loc Code
FP015	36	
68344 ✓	36	

2 BR 11-5-9

D3564-11	Manufactured	No		200	Each	2.0000	1	1
Wearshoe								

Location	Loc Qty	Loc Code
FP019 68350	2	
66154	2	

1 BR 11-5-9

D3564-13	Manufactured	No		200	Each	38.0000	1	1
Wearshoe								

Location	Loc Qty	Loc Code
FP017	38	
66136 ✓	16	
66549	6	
66805	16	

1 BR 11-5-9

D3564-9	Manufactured	No		200	Each	3.0000	1	1
Wearshoe								

Location	Loc Qty	Loc Code
FP019	3	
67590 ✓	3	

1 BR 11-59

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	**STEP**	**PROCEDURE CHANGE**	**By**	**Date**	**Qty**	**Approval** Chief Eng / Prod Mgr	**Approval** QC Inspector

Part No: _____ **PAR #:** _____ **Fault Category:** _____ **NCR:** Yes No **DQA:** _____ **Date:** _____

Resolution: _____ **Disposition:** _____ **QA: N/C Closed:** _____ **Date:** _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	**STEP**	**Description of NC** Section A	**Corrective Action** Section B			**Verification** Section C	**Approval** Chief Eng	**Approval** QC Inspector
			Initial Chief Eng	**Action Description** Chief Eng	**Sign & Date**			

NOTE: Date & initial all entries

Picklist Print

Wednesday, April 20, 2011 8:36:58 AM

Work Order ID: 68708

Parent Item: D205-634-041

Parent Item Name: Replacement Skidtube

Start Date: 4/20/2011 **Required Date:** 4/25/2011

Start Qty: 1.00 **Required Qty:** 1.00

D3564-5	Manufactured	No		200	Each	24.0000	1	1

Wearshoe

Location	Loc Qty	Loc Code
FG	2	
34806	2	
FP019	22	
66551 ✓	10	
67588 ✓	12	

1 BK 11-5-9

D2594-3	Manufactured	No		200	Each	1,304.000	16	16

O-Ring, 205 Skidtube

Location	Loc Qty	Loc Code
FP-A	1304	
65518 ✓	304	
66952	1000	

16 BK 11-5-9

D2594-1	Manufactured	No		200	Each	403.0000	16	16

Plug, 205 Skidtube

Location	Loc Qty	Loc Code
FP-A	403	
42807	28	
66122 ✓	148	
66932	220	
67441	7	

16 BK 11-5-9

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	**STEP**	**PROCEDURE CHANGE**	**By**	**Date**	**Qty**	**Approval** Chief Eng / Prod Mgr	**Approval** QC Inspector

Part No: _____ **PAR #:** _____ **Fault Category:** _____ **NCR:** Yes No **DQA:** _____ **Date:** _____

Resolution: _____ **Disposition:** _____ **QA: N/C Closed:** _____ **Date:** _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
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NOTE: Date & initial all entries

DART

DESIGN	DRAWN BY	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED	APPROVED	DRAWING NO. D2580	REV. D SHEET 1 OF 3
DATE 07.02.27		TITLE 205 SKIDTUBE ASSEMBLY	SCALE NTS

A	96.09.16	NEW ISSUE
B	96.12.02	AS MANUFACTURED
C	98.08.26	REDRAWN, INCLUDED DEO 9094/9097
D	07.02.27	CHANGE TO SS WEARPLATES AND GASKETS, INCLUDE DEO 9124/9183

RELEASED
07.06.28

DEO ATTACHED

QTY -041	QTY -045	Part Number	Description
X		**D2580-041**	**SKIDTUBE ASSEMBLY**
	X	**D2580-045**	**SKIDTUBE ASSEMBLY**
1	1	D2500-1-190	EXTRUSION
1	1	D2576-3	STEP
20	24	D2579	CROSS BOLT SPACER
16	16	D2594-1	PLUG
16	16	D2594-3	O-RING
1	1	D2596	205 WEB
1	1	D2855	AFT CAP
1	1	D3564-5	WEARSHOE
1	1	D3564-9	WEARSHOE
1	1	D3564-11	WEARSHOE
1	1	D3564-13	WEARSHOE
2	2	D3566-1	GASKET
1	1	D3566-5	GASKET
1	1	D3566-13	GASKET
50	50	ALS7-1032-130 or AKS7-1032-130 or AKS4-1032-130 or AELS-1032-130	INSERT
50	50	AN3C4A	BOLT
2	2	AN3-5A	BOLT
50	50	AN960C10L	WASHER
2	2	AN960JD10L	WASHER

SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 68708
11-04-20

GENERAL NOTES:

1) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
2) ALL DIMENSIONS ARE IN INCHES
3) INSERT D2596 WEB TO LOCATION SHOWN OFF AFT END OF SKIDTUBE AND BOND WEB INTO OUTER TUBE WITH NON-STRUCTURAL SIKAFLEX-241 ADHESIVE PER DART QSI 015 BEFORE BENDING. ENSURE HOLES LINE-UP.
4) BEND AS A SMOOTH RADIUS STARTING WITH A MAXIMUM CENTERLINE RADIUS OF 60 AND ENDING WITH A MINIMUM RADIUS OF 30. A MAXIMUM REDUCTION OF 0.200 IN DIAMETER IS ALLOWABLE IN THE BENT PORTION OF THE TUBE.
5) USE DART DRILL TEMPLATE TD2577-205 TO LOCATE AND DRILL Ø0.297 HOLES FOR WEARSHOE INSERTS. INSTALL ALS7-1032-130 PER SECTION D-D (50 PLACES) AFTER FINISH. INSTALL AN3C4A BOLTS AND AN960C10L WASHERS WITH SIKAFLEX-241/-291.
6) WELDING TO BE DONE PER DART QSI 004.
7) FINISH:
 SEE NOTES ON
 PAGE 2 FOR D2580-041 AND
 PAGE 3 FOR D2580-045
8) INSERT D2594-1 PLUG C/W D2594-3 O-RING IN HOLES MARKED 'P' (BOTH SIDES OF TUBE) AFTER FINISH (16 PLACES).

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Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	**STEP**	**PROCEDURE CHANGE**	**By**	**Date**	**Qty**	**Approval** Chief Eng / Prod Mgr	**Approval** QC Inspector

Part No: _____ **PAR #:** _____ **Fault Category:** _____ **NCR:** Yes No **DQA:** _____ **Date:** _____

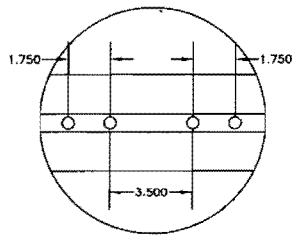
Resolution: _____ **Disposition:** _____ **QA: N/C Closed:** _____ **Date:** _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	**STEP**	**Description of NC** Section A	**Corrective Action** Section B			**Verification** Section C	**Approval** Chief Eng	**Approval** QC Inspector
			Initial Chief Eng	**Action Description** Chief Eng	**Sign & Date**			

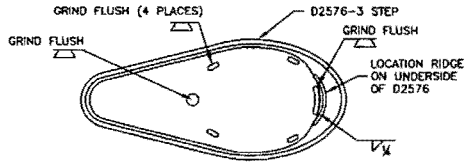
NOTE: Date & initial all entries

W/O 68708

DETAIL A
SCALE 5:24



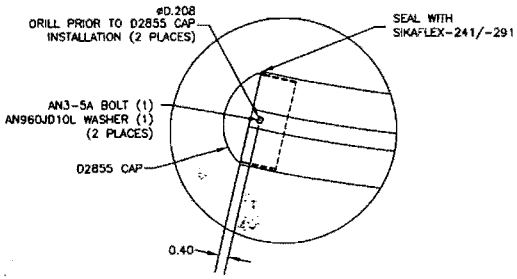
DETAIL B
SCALE 5:24



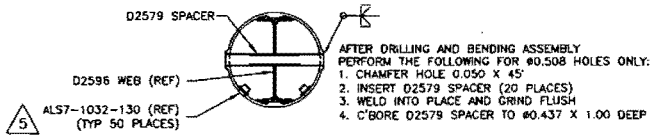
RELEASED
07.06.28

DEO ATTACHED

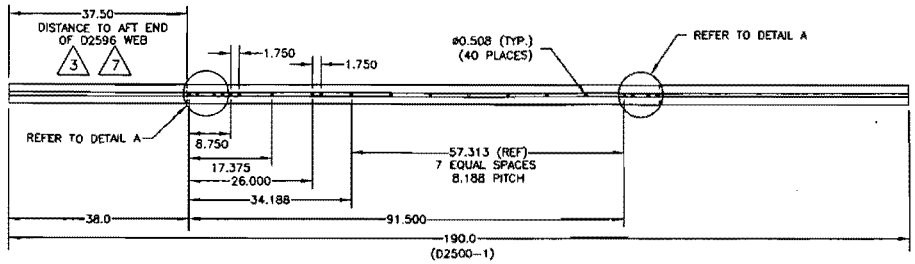
DETAIL C
SCALE 5:24



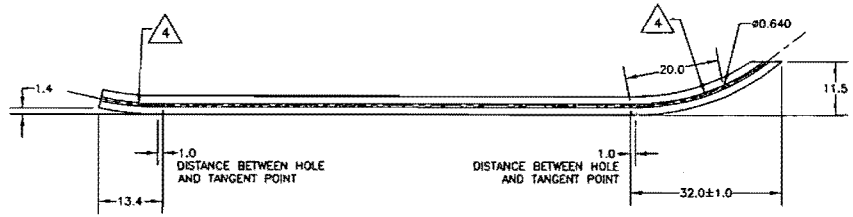
SECTION D-D
SCALE 5:24



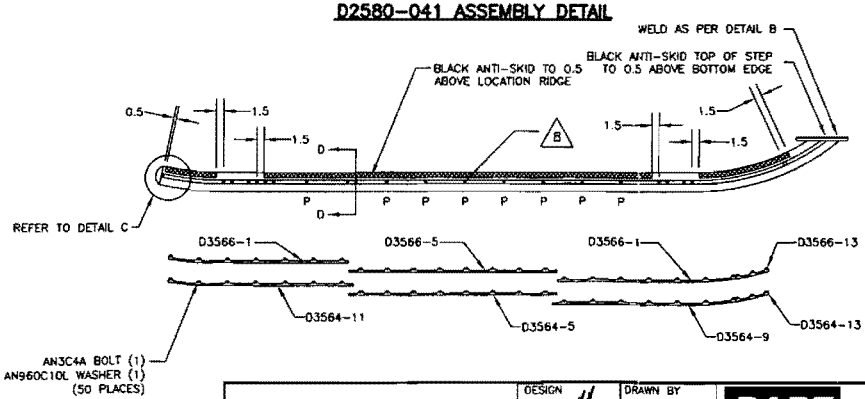
D2580-1 DRILLING DETAIL



D2580-1 BENDING AND CUTTING DETAIL



D2580-041 ASSEMBLY DETAIL



D2580-041 NOTES

i) FINISH: ACID ETCH, ALODINE PER DART QSI 005 4.1 PRIOR TO INSERTING D2596 WEB POWDER COAT ASSEMBLY GLOSS WHITE (REF. 4.3.5.1) PER DART QSI 005 4.3 BLACK ANTI-SKID PAINT AS INDICATED PER DART QSI 005 4.4

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DESIGN	DRAWN BY	DART AEROSPACE LTD. HAWKESBURY, ONTARIO, CANADA
CHECKED	APPROVED	DRAWING NO. D2580 — REV. D — SHEET 2 OF 3
DATE 07.02.27		TITLE 205 SKIDTUBE ASSEMBLY — SCALE 1:24

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	**STEP**	**PROCEDURE CHANGE**	**By**	**Date**	**Qty**	**Approval** Chief Eng / Prod Mgr	**Approval** QC Inspector

Part No: _____ **PAR #:** _____ **Fault Category:** _____ **NCR:** Yes No **DQA:** _____ **Date:** _____

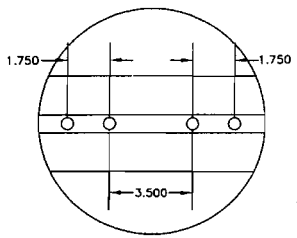
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NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	**STEP**	**Description of NC** Section A	**Corrective Action** Section B			**Verification** Section C	**Approval** Chief Eng	**Approval** QC Inspector
			Initial Chief Eng	**Action Description** Chief Eng	**Sign & Date**			

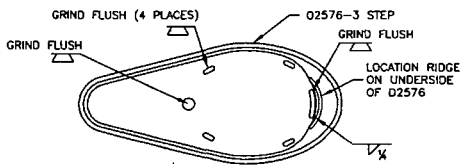
NOTE: Date & initial all entries

w/o 68738

DETAIL E
SCALE 5:24



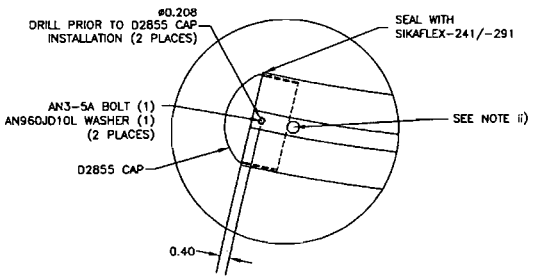
DETAIL F
SCALE 5:24



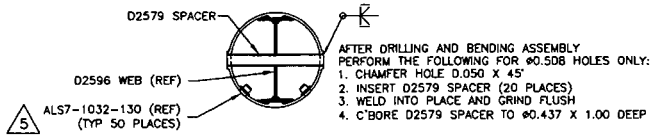
RELEASED
07.02.28

DEO ATTACHED

DETAIL G
SCALE 5:24

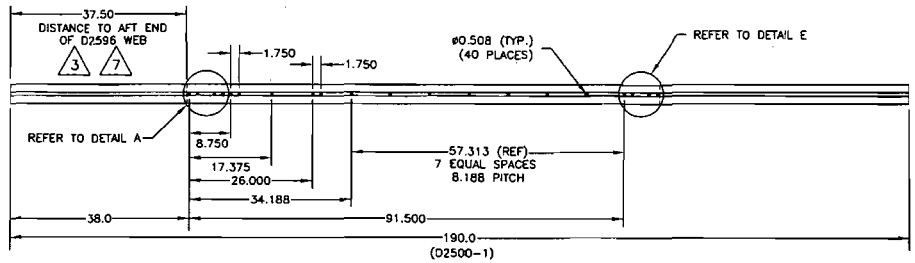


SECTION H-H
SCALE 5:24

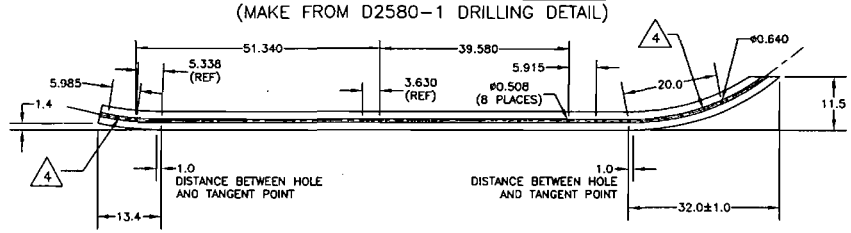


C

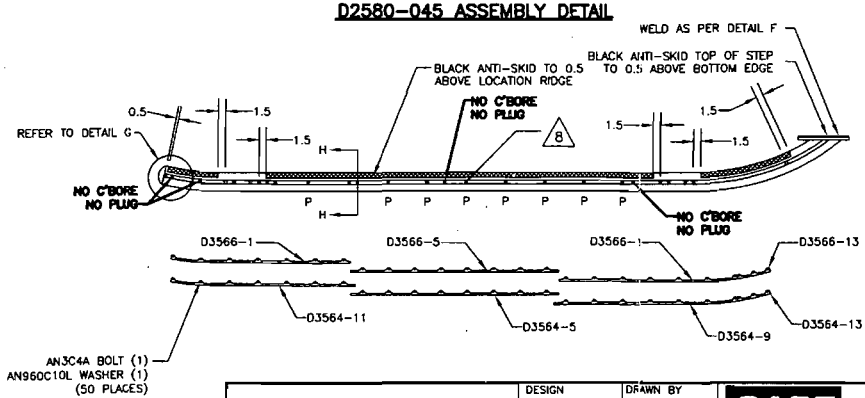
D2580-1 DRILLING DETAIL



D2580-5 BENDING AND CUTTING DETAIL
(MAKE FROM D2580-1 DRILLING DETAIL)



D2580-045 ASSEMBLY DETAIL



D2580-045 NOTES

i) FINISH: ACID ETCH, ALODINE PER DART QSI 005 4.1 PRIOR TO INSERTING D2596 WEB
POWDER COAT ENTIRE ASSEMBLY GREEN (REF. 4.3.5.8) PER DART QSI 005 4.3
BLACK ANTI-SKID PAINT AS INDICATED PER DART QSI 005 4.4

ii) IT IS ACCEPTABLE TO GRIND A RELIEF IN THE D2855 AFT CAP TO PREVENT INTERFERENCE WITH THE SPACER AT THIS LOCATION

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DESIGN	DRAWN BY	DART AEROSPACE LTD. HAWKESBURY, ONTARIO, CANADA
RH	RH	
CHECKED	APPROVED	DRAWING NO. D2580 REV. D
		SHEET 3 OF 3
DATE 07.02.27		TITLE 205 SKIDTUBE ASSEMBLY SCALE 1:24

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	**STEP**	**PROCEDURE CHANGE**	**By**	**Date**	**Qty**	**Approval** Chief Eng / Prod Mgr	**Approval** QC Inspector

Part No: _____ **PAR #:** _____ **Fault Category:** _____ **NCR:** Yes No **DQA:** _____ **Date:** _____

Resolution: _____ **Disposition:** _____ **QA: N/C Closed:** _____ **Date:** _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	**STEP**	**Description of NC** Section A	**Corrective Action** Section B			**Verification** Section C	**Approval** Chief Eng	**Approval** QC Inspector
			Initial Chief Eng	**Action Description** Chief Eng	**Sign & Date**			

NOTE: Date & initial all entries

DRAWING NO.	TITLE	REV. D	DART AEROSPACE LTD	D.E.O. NO.	SHEET NO.	SCALE
D2580	205 SKIDTUBE ASSEMBLY		ENGINEERING ORDER	D2580-D-1	SHEET 1 OF 1	NTS

DRAWN	CHECKED	MFG. APPR.	APPROVED	DE APPR.
DATE 10.09.22	DATE 10-11-04	DATE 10.11.04	DATE 10/11/04	DATE 10-11-04

PURPOSE:
CHANGE ALL WELDED CROSSBOLT SPACERS TO SWAGED SPACERS

CHANGE:
PARTS LIST IS AMENDED AS FOLLOWS:

w/o 48788

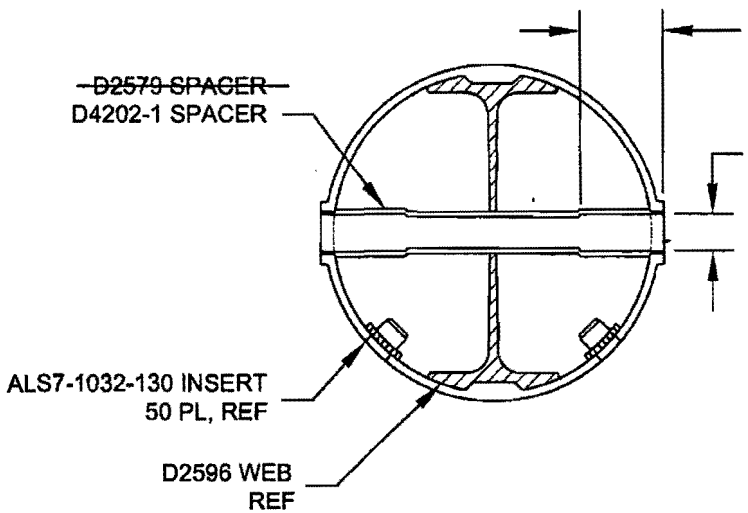
WAS

QTY -041	QTY -045	PART NUMBER	DESCRIPTION
20	24	D2579	CROSS BOLT SPACER

IS

20	24	D4202-1	SPACER

SECTION D-D & SECTION H-H ARE AMENDED AS FOLLOWS:



RELEASED
2010 -11- 18

AFTER DRILLING AND BENDING ASSEMBLY
PERFORM THE FOLLOWING FOR Ø0.508 HOLES ONLY:

~~1. CHAMFER HOLE 0.050 X 45°~~
~~2. INSERT D2579 SPACER (20 PLACES)~~
~~3. WELD INTO PLACE AND GRIND FLUSH~~
~~4. C'BORE D2579 SPACER TO Ø0.437 X 1.00 DEEP~~

1. INSERT D4202-1 SPACER, 20 PL (-041) OR 24 PL (-045)
2. SWAGE TO Ø0.437 X 1.00 DEEP PER QSI 002
3. TRIM / GRIND FLUSH PER QSI 002

SECTION D-D
NOT TO SCALE

SECTION H-H
NOT TO SCALE

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Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
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Part No: _____ **PAR #:** _____ **Fault Category:** _____ **NCR:** Yes No **DQA:** _____ **Date:** _____

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			Initial Chief Eng	**Action Description** Chief Eng	**Sign & Date**			

NOTE: Date & initial all entries

Linda Lacelle

From: dshepherd@dartaero.com
Sent: April 18, 2011 11:36 AM
To: Linda Lacelle; Mike Petsche
Cc: Bill Beckett; 'Chris Provencal'; 'Eric Charbonneau'
Subject: Re: Alum. Solution Anneal - swaging

Makes sense to me ... We don't want to get caught short ... Make sure that if we do this, they are identified with the old CHG number.

David

Sent from my BlackBerry device on the Rogers Wireless Network

From: "Linda Lacelle" <llacelle@dartaero.com>
Date: Mon, 18 Apr 2011 11:21:10 -0400
To: 'Mike Petsche'<mpetsche@dartaero.com>; <dshepherd@dartaero.com>
Cc: 'Bill Beckett'<bbeckett@dartaero.com>; 'Chris Provencal'<cprovencal@dartaero.com>; 'Eric Charbonneau'<echarbonneau@dartaero.com>
Subject: RE: Alum. Solution Anneal - swaging

I am ready to weld some up, I don't want to get into trouble with L/T's on these, any objections??
LL

From: Mike Petsche [mailto:mpetsche@dartaero.com]
Sent: April 18, 2011 10:42 AM
To: 'Linda Lacelle'; dshepherd@dartaero.com
Cc: 'Bill Beckett'; 'Chris Provencal'; 'Eric Charbonneau'
Subject: RE: Alum. Solution Anneal - swaging

CC7 CHG D2579

Well I'm not sure what to say.

It is my understanding that the swaging will still make sense even with the extra hoops we need to jump through.

If there is still uncertainty on the delivery of the material, we CAN still weld them if we need to.

And while this might be less than "world class", couldn't we take some of our tubing that we have in stock and zap it with the welder to knock down the temper a little? Ground clamp on one end, torch on the other.....BZZZZZZT.

(I'm only sort of joking....because I bet it would work)

From: Linda Lacelle [mailto:llacelle@dartaero.com]
Sent: April 18, 2011 9:44 AM
To: dshepherd@dartaero.com; 'Mike Petsche'
Cc: Bill Beckett; Chris Provencal; Eric Charbonneau
Subject: RE: Alum. Solution Anneal - swaging
Importance: High



So any thoughts about going fwd for now with 205's? We are down to 6, and I don't want to run out as we have orders for these for early May.
LL

From: Linda Lacelle [mailto:llacelle@dartaero.com]
Sent: April 12, 2011 8:11 AM
To: dshepherd@dartaero.com; 'Mike Petsche' (mpetsche@dartaero.com)
Cc: Bill Beckett (bbeckett@dartaero.com); Chris Provencal (cprovencal@dartaero.com); Eric Charbonneau (echarbonneau@dartaero.com)
Subject: FW: Alum. Solution Anneal - swaging

So if we send them 400 pcs of the 6061T6 tube, they can temper it to T4 for a cost of 1850.00...
LL

From: John Spencer [mailto:johns@metcor.biz]
Sent: April 12, 2011 8:04 AM
To: llacelle@dartaero.com
Subject: Alum. Solution Anneal

Linda,
Metcor could process the tubes within a few days after receiving.
Price for the lot is $1850 including conductivity test.
Would prefer 8 inch cut to length, if not we could manage 4 " lengths .
Please let me know and contact me on my cell.

Regards,

John Spencer

Metcor Inc.
Nadcap Certified
johns@metcor.biz
514-386-1620

NO. 249

AWS D17.1.2001
QUALIFICATION TEST RECORD

Name: Barclay Elliott
Job number: 67531
Part number: 1205 634 041
Description: 205
Welding Process: Tig[X] Mig[]
Base materiel: Aluminum
Current: AC[X] DC[]

TEST REQUIREMENTS AND RESULTS

Visual:	pass[✓] fail[]
Penetration:	pass[✓] fail[]

UNACCEPTABLE

Cracks:	pass[✓] fail[]
Undercut:	pass[✓] fail[]
Pin holes:	pass[✓] fail[]
Overlap (cold lap)	pass[✓] fail[]
Porosity (surface):	pass[✓] fail[]
Coloration:	pass[✓] fail[]

Qualifier Nat Lemon **Date of Test Coupon** 11·04·25

Welder Barclay Elliott **Date of Test Coupon** 11·04·25

The above named individual is qualified in accordance with AWS D17.1.2001 to weld